

# Wild Birds and Feral Swine

## The Wildlife Perspective regarding One Medicine

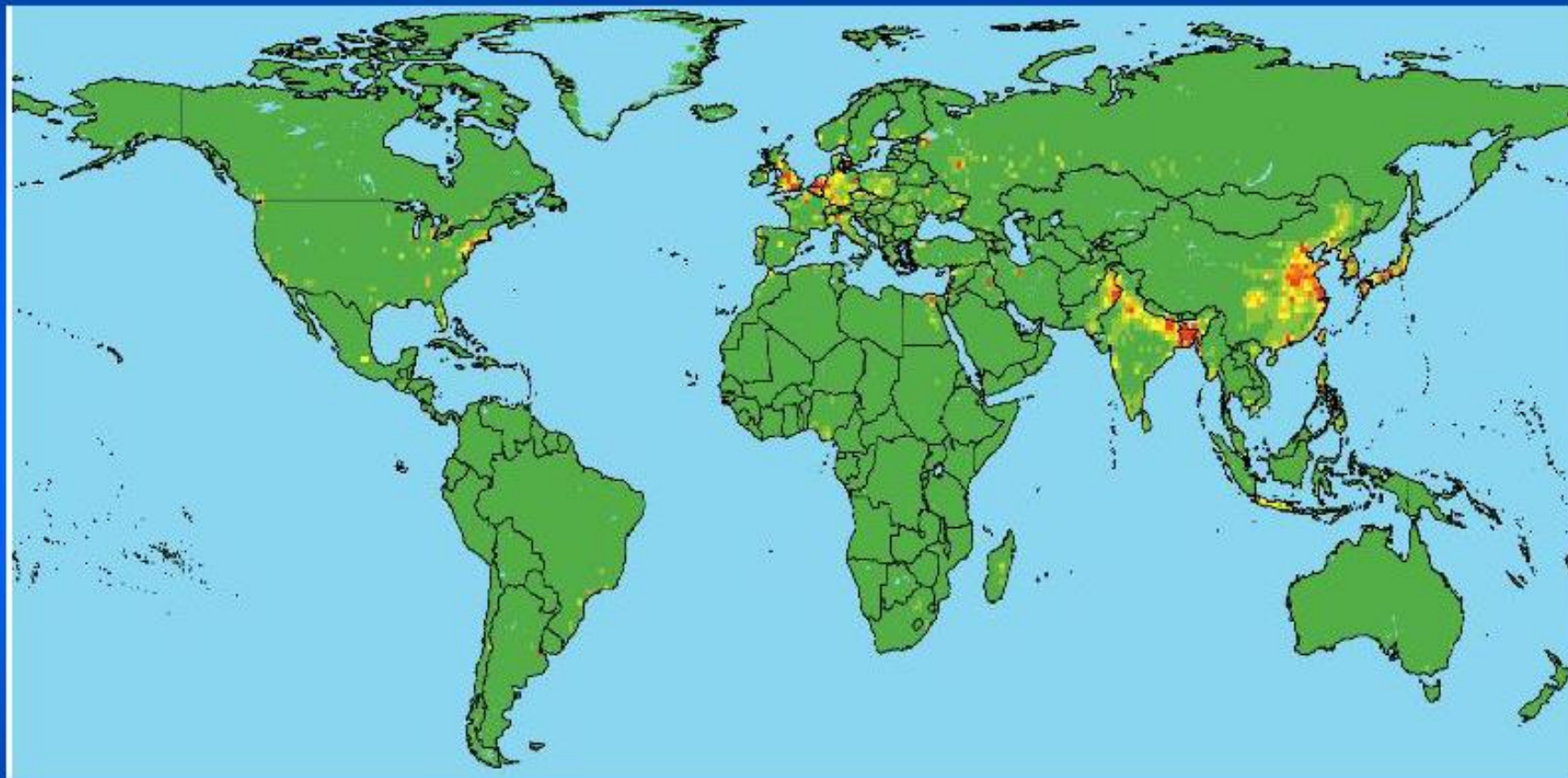
*Seth R. Swafford and Carl W. Betsill*  
*USDA/APHIS - Wildlife Services*



**WS** Wildlife  
Services

Protecting People | Protecting Agriculture | Protecting Wildlife

Relative risk EID from zoonotic pathogen from non-wildlife



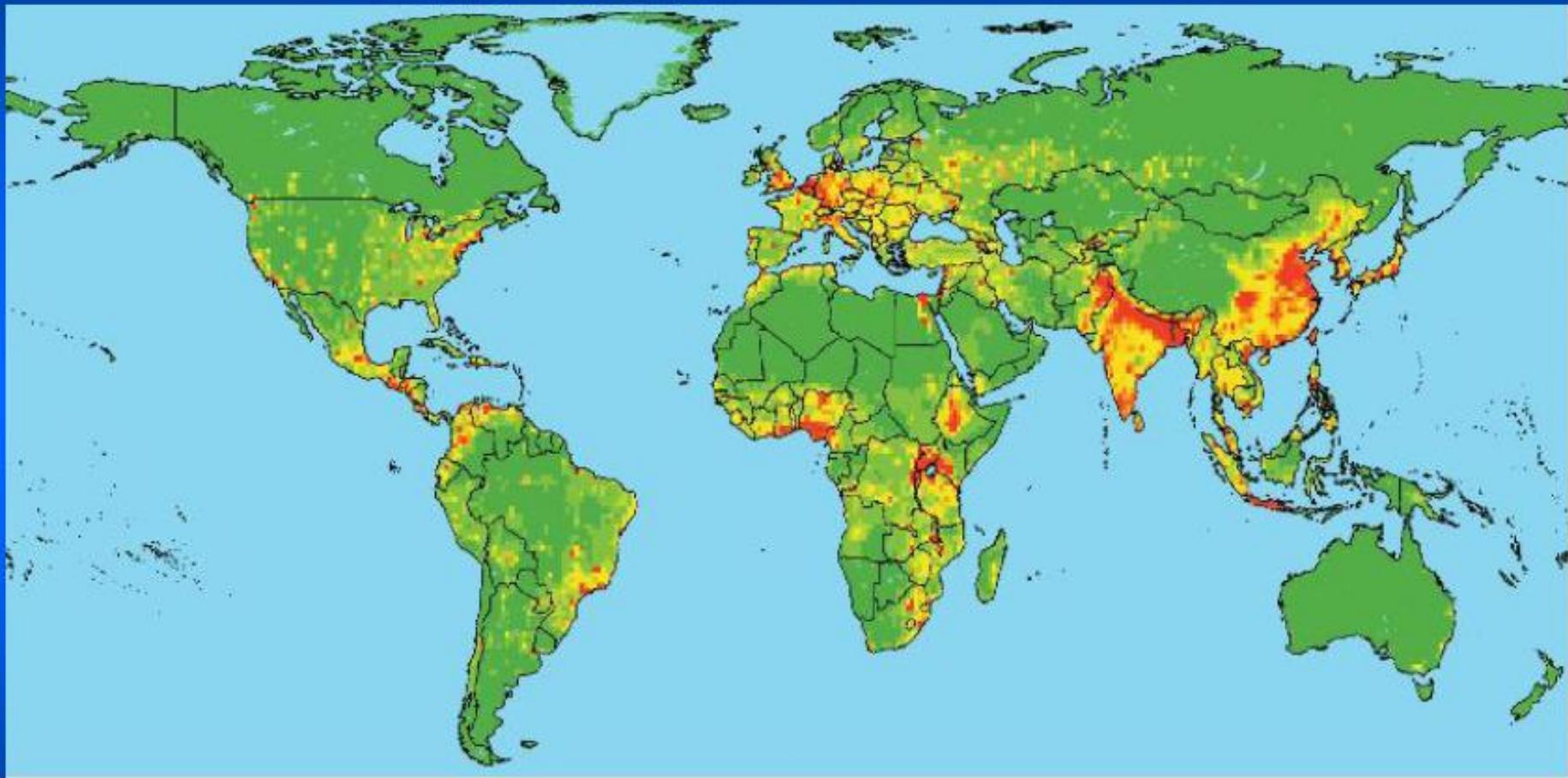
*Jones et al, Nature 21 Feb 2008*

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Relative risk EID from zoonotic pathogen from wildlife

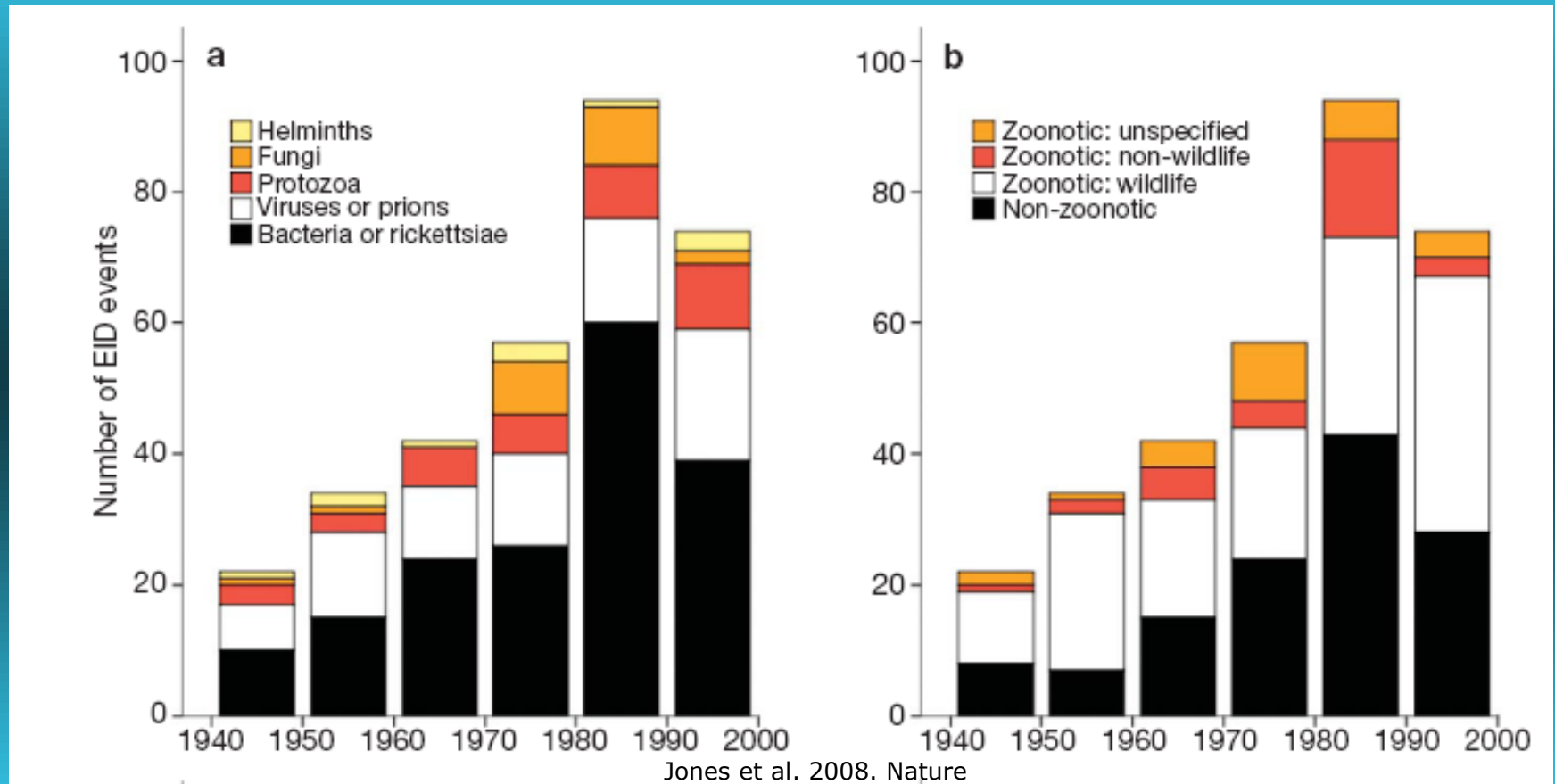


*Jones et al, Nature 21 Feb 2008*

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# Number and Type of EID Events Per Decade



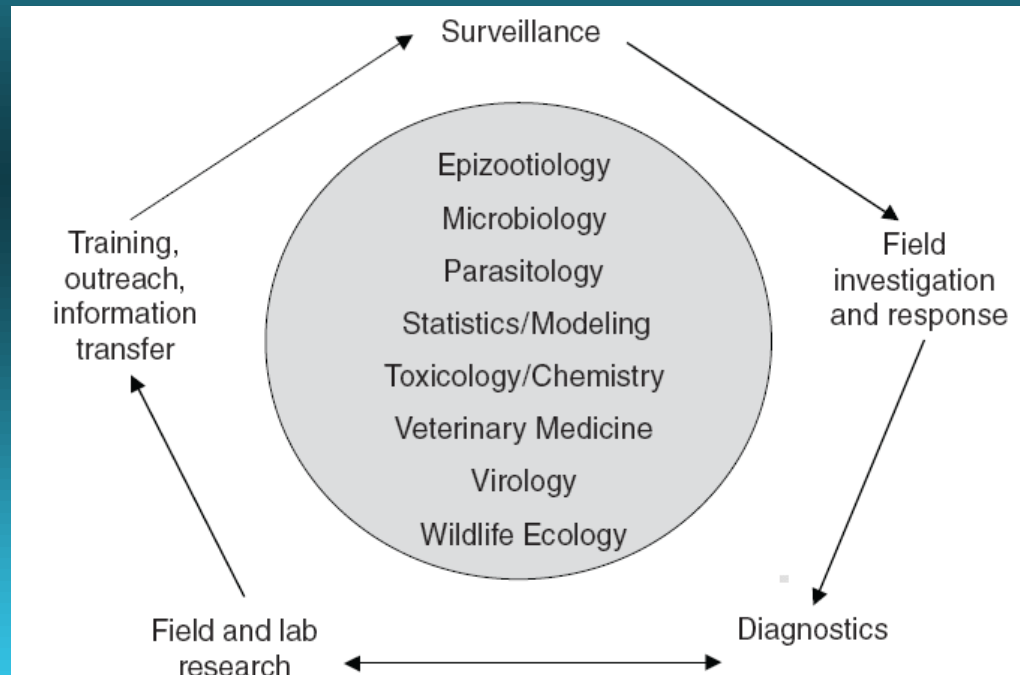
335 emerging infectious diseases since 1940  
140 from wildlife

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# Complexity of Disease Investigation in Wildlife

Understanding, Predicting/Preventing, Epidemiology, and Management



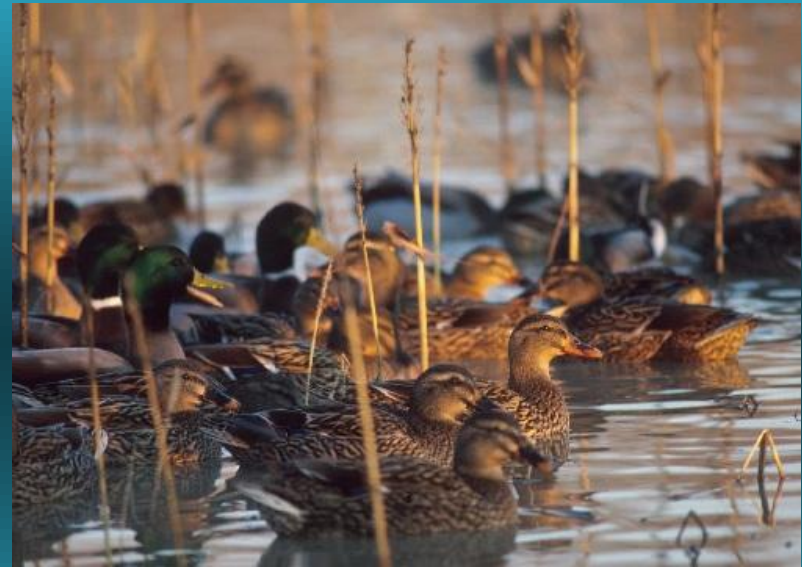
Dein and Wright 2008

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# Complexity of Disease Investigation in Wildlife

- Estimating Disease in Wildlife Populations
  - Requires knowledge of
    - Population Size
    - Number at risk
    - Number infected
    - What, when, and where
  - Rely on indirect measures
    - Use of sentinels





# Complexity of Disease Investigation in Wildlife

- Diagnostic Tests
- Capturing Wildlife



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# Justification for Including Wildlife in One Medicine Approaches

- Reservoirs
- Budgetary Constraints
  - Epidemiology
  - Need for Science
- Statistically Valid Data
  - Education

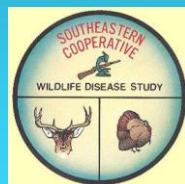


# Avian Influenza Surveillance in Wild, Migratory Birds

Use Wild Birds as Sentinels for the Early Detection of HPAI



# An Early Detection System for Asian H5N1 Highly Pathogenic Avian Influenza in Wild Migratory Birds



# Sampling and Testing Approaches

Standardized Methodologies

Emphasize M/M Investigation

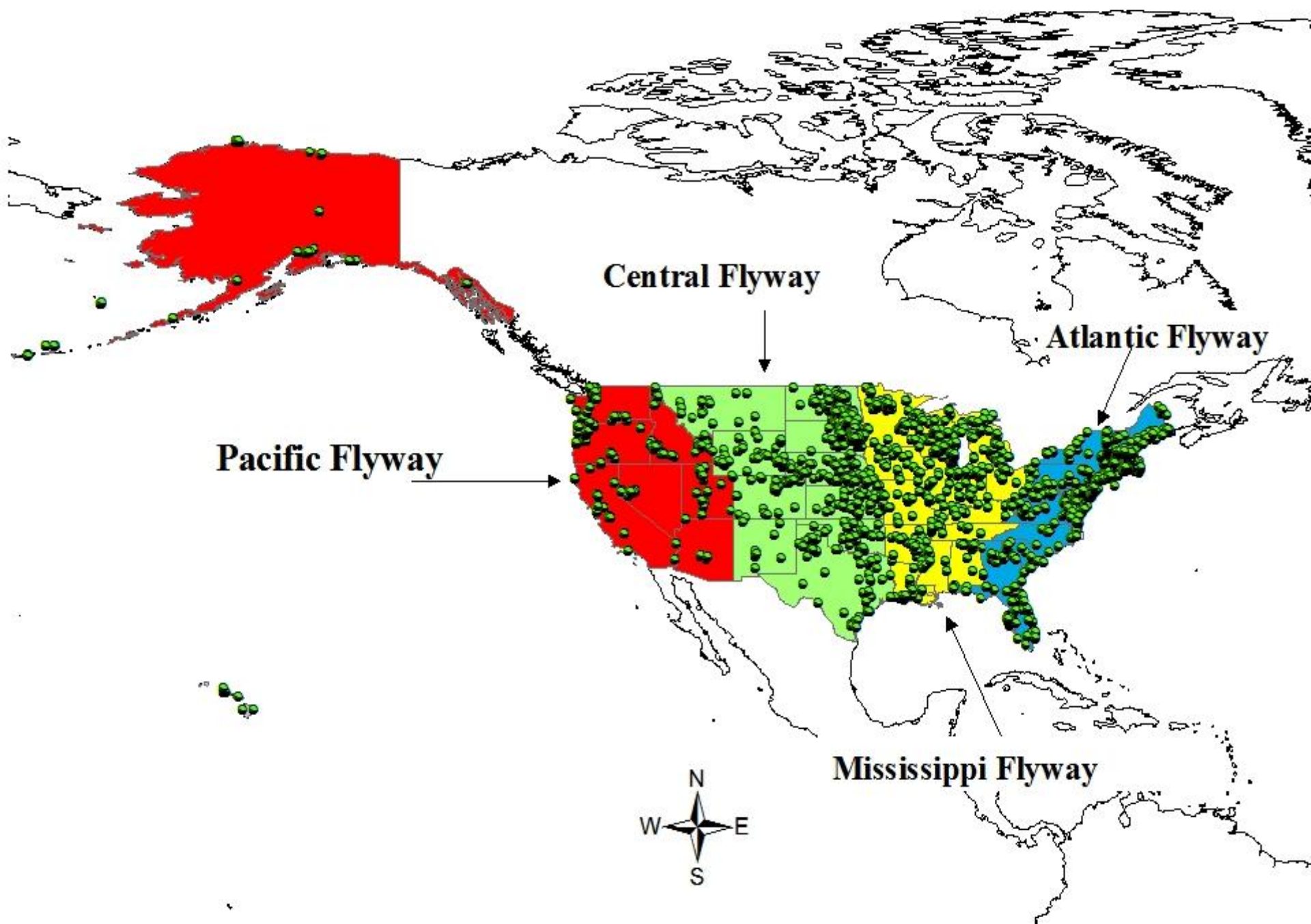
Targeted Surveillance of Competent Carriers

Common H5 and H7 Assays



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# - Results - The Story Ends Here

No HPAI Detected  
In  
Wild, Migratory Birds

# Comprehensive Feral Swine Disease Surveillance and Monitoring



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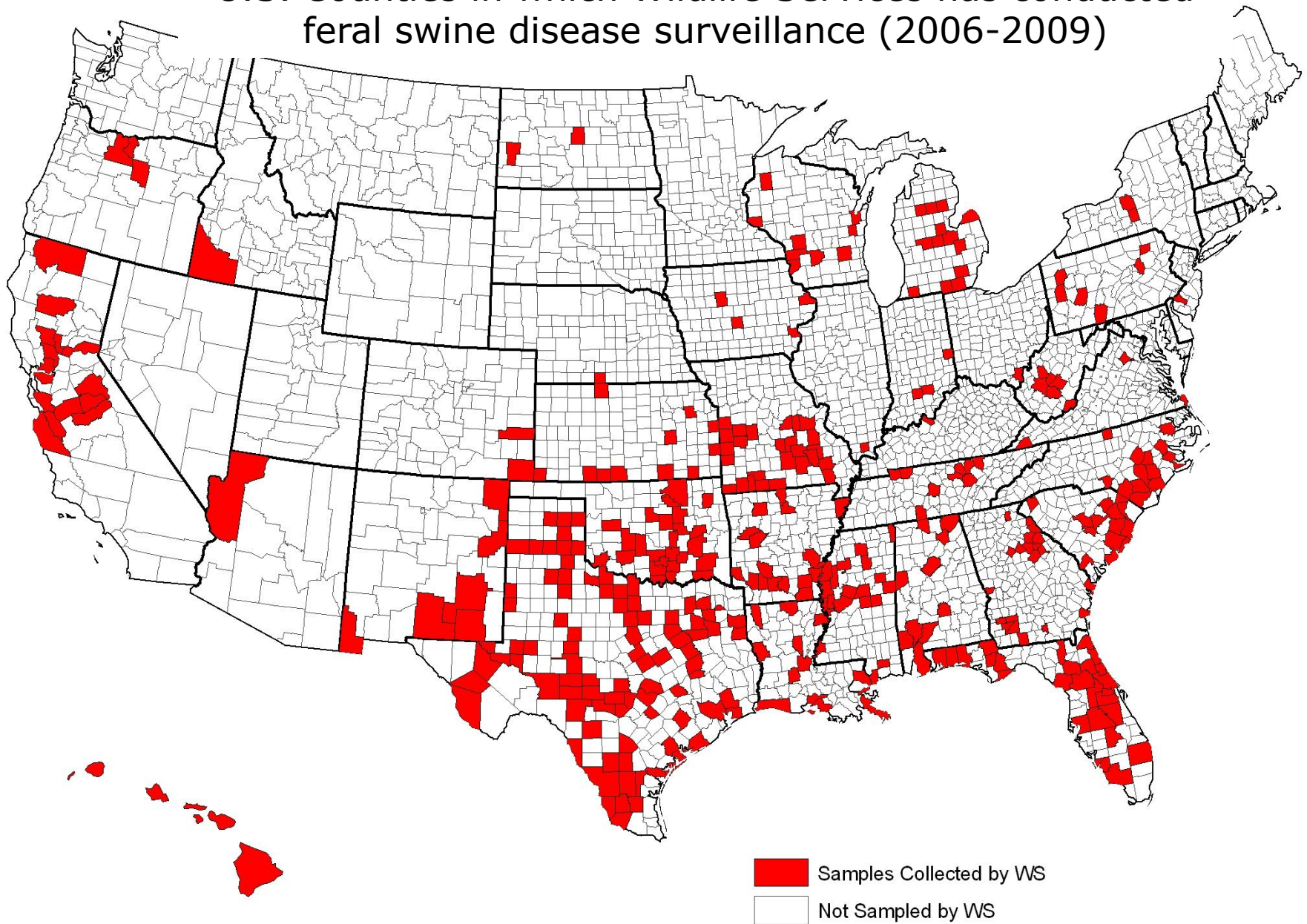
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# Known Feral Swine Diseases

- Pseudorabies
- Swine Brucellosis
- Classical Swine Fever
- African Swine Fever
- Bovine Tuberculosis
- Influenza???
- PRRS
- Anthrax
- Tularemia
- West Nile virus
- E. coli
- Salmonella
- Trichinosis
- Toxoplasmosis
- Ticks, Fleas, Lice
- Internal parasites



# U.S. Counties in which Wildlife Services has conducted feral swine disease surveillance (2006-2009)





# Necessary Program Partnerships/Cooperation

- Federal Agencies
- State Wildlife Agencies
- State Agriculture Departments
  - Domestic Swine Industry
    - Laboratories
    - Universities
- Wildlife/Animal Health Organizations

# Can We Succeed at One Medicine?

- Recognize human-animal-environment linkages
- Devise adaptive, holistic approaches
- Increase investment in comprehensive surveillance and prevention efforts
- Collaborate – integrate
- Education and Awareness

# Contact Information

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